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A Comparison of Authentication Methods via Keystroke Dynamics (Conference Paper)

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Abstract

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Authentication systems based on keystroke dynamics analyze the typical typing pattern of a user when interacting with an input device, such as the keyboard of a computer. In the literature, three major approaches on keystroke dynamics can be found: distance-based, statistical-based and machine learning-based approaches, which are often used to solve the problem. Nevertheless, in the literature there are several works which results are obtained from different comparison methodologies; this represents a great problem for future researchers who seek to improve or advance with prior works. Furthermore, by using proprietary databases, researchers do not provide a good overview of the overall performance of their methods, but rather an overview in a specific case: That represented by their database. In this investigation, we proposed to evaluate the performance of the most representative classifiers in two of the three most common approaches used in keystroke dynamics using the public Greyc dataset. The experimental results, reveal that machine-learning based approaches outperformed the distance-based techniques. Moreover, the Random Forest classifier, provided encouraging results. © 2020 IEEE.

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